Assessing Returns of IDX Sharia Growth Stocks: Applying the Fama-French Five-Factor Model for Portfolio Optimization

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Abstract: This study examines the influence of the Fama-French five-factor model on the excess return of stocks listed in the Indonesia Stock Exchange Sharia Growth Index and offers recommendations for optimizing Sharia-compliant portfolios. The model includes five independent variables: overall market return, firm size (measured by the return difference between small and large firms), book-to-market value, profitability (difference between firms with strong and weak earnings), and investment strategy (difference between conservative and aggressive asset growth). The analysis uses quarterly data from 2022 to 2023 and selects 14 companies from the index based on data completeness and consistent listing. Multiple linear regression with the Ordinary Least Squares method reveals that only the market return and firm size factors have a significant effect on excess return, with firm size having the strongest impact. Meanwhile, the book-to-market value, profitability, and investment strategy factors do not show significant individual influence. However, when assessed collectively, all five factors explain 93.06 percent of the variation in excess return, indicating the model's overall strength. The study is limited by its short time frame due to the recent launch of the index and its relatively small sample size. These findings suggest that Sharia-compliant investors should prioritize firm size and market trends in portfolio construction. Future research should incorporate longer time periods, broader index comparisons, and qualitative factors such as investor sentiment or environmental, social, and governance indicators to enhance understanding of return behavior in Islamic equity markets.

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Introduction

The Islamic capital market in Indonesia has shown significant growth in recent years, reflecting increased investor interest in investment instruments that comply with Sharia principles. In September 2023, the number of Islamic investors reached 130,497. This achievement has grown 10.6% from December 2022. Throughout 2022, the total number of Islamic capital market investors reached 117,942 investors. Yet, the number of Islamic investors reached 138,418 at the end of 2023. This figure increased 17.4% year to date (YTD) from 117,942 investors on the previous year.

IDX Sharia Growth (IDXSHAGROW) is an index that measures the price performance of 30 Islamic stocks that have a growth trend in net income and revenue relative to price with transaction liquidity and good financial performance run (IDX Syariah, 2022). In contrast to Islamic indices such as ISSI, JII, and JII70, which generally represent broader segments of Sharia-compliant stocks, the IDX Sharia Growth (IDXSHAGROW) index is uniquely constructed to reflect companies with strong growth characteristics. Launched in late 2022, IDXSHAGROW exclusively comprises 30 Islamic stocks with consistent revenue and net income increases, with sound liquidity and financial performance. This index presents a new area of research that has not been widely explored due to its recent inception. The emphasis on high-growth Sharia-compliant companies makes IDXSHAGROW particularly relevant for modern Islamic investors—especially younger generations—who seek dynamic investment vehicles aligned with ethical principles and high capital appreciation potential. Therefore, this study provides an early and timely empirical investigation into the performance dynamics of this novel index.

Investors looking for significant capital growth tend to be attracted to stocks in this index (Sunarsih & Sholihati, 2023). Using the Fama-French five-factor model to analyze and optimize Islamic stock portfolios allows investors to understand and manage the risks and factors affecting returns (Mosoeu & Kodongo, 2022). It helps construct a more diversified and efficient portfolio, considering factors such as company size, value, profitability, and investment (Dirkx & Peter, 2020).

Fama and French's (2015) five-factor model has attracted considerable attention in the asset pricing literature. Interest in applying the five-factor model continues to increase among researchers and practitioners. Previous research shows that the five-factor model also works in the Chinese stock market (Lin, 2017). Research results (Abdul Halim, 2023) show that when calculating the appropriate expected rate of return for Sharia-compliant portfolios in the U.S., there is evidence to suggest that the Fama & French Five Factor model is more suitable than the traditional Capital Asset Pricing Model (CAPM) because the additional risk premium shows consistent significance across groups of Sharia-compliant companies. Later research conducted in Indonesia on common stocks found that size, value, profitability, and investment could help explain average returns (Foye & Valentinčič, 2020).

Many asset pricing models have been proposed to explain the behavior of returns in the global stock market (Chiah et al., 2016). Among these, the capital asset pricing model (CAPM) by Sharpe (1964) and Lintner (1965), the three-factor model by Fama and French (1993), and the four-factor model by Carhart (1997) are considered sufficient to explain cross-sectoral variations in stock returns and market anomalies (Awwaliyah & Husodo, 2019; Dhaoui & Bensalah, 2017). Using global factors, Fama (1998) confirmed the international adaptation of his three-factor model (Fama & French, 1996). Following these studies, subsequent research found additional patterns in mean reversion associated with profitability and investment.

Therefore, a five-factor asset pricing model that considers the market, size, value-growth, profitability, and investment factors is proposed by Fama and French (2015), which provides stronger explanatory power for asset returns. Fama and French (2017) studied international markets to test the model's robustness. Their five-factor model can explain return anomalies in most global regions (Fama & French, 2017). However, the model's performance varies from region to region. Racicot and Rentz (2017) also showed that the significance of the Fama and French factors varied widely (Racicot & Rentz, 2017).

The research questions raised are: (1) how is the optimal stock portfolio formed from the *Fama-French Five Factor Model?* and (2) how does the *Fama-French Five Factor Model* affect the *excess return of IDX Sharia* Growth Stocks?

Applying this model to Islamic stocks provides a more comprehensive view of the returns and risks of investing in Sharia-compliant stocks. This research focuses on the returns of Islamic stocks included

in the IDX Sharia Growth Stocks. Using the Fama-French five-factor model, this study aims to analyze the factors that influence the excess return of IDX Sharia Growth Stocks and provide recommendations for portfolio optimization. This research is the first to examine the factors that affect the excess return of IDX Sharia Growth Stocks in Indonesia using the Fama-French five-factor model.

The application of the Fama-French five-factor model to Islamic stocks has several benefits. First, it helps Islamic investors make more informational investment decisions based on empirical data. Second, Islamic fund managers can design more efficient portfolio strategies by considering various factors that affect returns. Third, it provides insights for policymakers and academics regarding Indonesia's Islamic stock market dynamics.

Literature Review and Hypothesis Development
The Fama-French Five-Factor Model

The Fama-French five-factor model represents a significant advancement in asset pricing theory, extending the foundational three-factor model introduced by Fama and French in the early 1990s. This model incorporates two additional explanatory variables—profitability (measured by the return difference between firms with robust and weak earnings) and investment (measured by the return difference between firms with conservative and aggressive asset growth strategies)—alongside the original factors: overall market return, firm size (measured by the return difference between small and large firms), and book-to-market value (measured by the return difference between high and low book-to-market ratio firms). These additions aim to enhance the model's ability to explain cross-sectional variations in stock returns (Diallo et al., 2023; Xu, 2024).

Early research on the Fama-French three-factor model demonstrated its effectiveness in capturing market risk, size effects, and the book-to-market ratio. Yet, it fell short of explaining certain anomalies in stock returns, particularly those related to momentum and systematic variance linked to profitability and investment practices (Lin, 2017). The introduction of the five-factor model sought to address these limitations, offering a more comprehensive framework for asset pricing. Empirical studies indicate that the five-factor model explains a greater proportion of cross-sectional return variation, especially concerning return premiums associated with profitability and investment decisions (Xu, 2024).

However, the model's application has yielded heterogeneous results across different markets. Studies in various countries, including Indonesia and Australia, report mixed findings. For instance, Sutrisno & Ekaputra (2016) observed a redundancy of the book-to-market factor once profitability and investment were accounted for in the Indonesian market (Sutrisno & Ekaputra, 2016). These findings imply that the five-factor model's robustness is contingent on local economic conditions and market structures. (Sohor & Low, 2024).

Furthermore, subsequent research has identified limitations of the model, notably its inability to adequately capture momentum effects prevalent in many markets (Lin, 2017). It has stimulated discourse on refining the model by incorporating momentum or behavioral finance factors to improve predictive accuracy (Sohor & Low, 2024). Additionally, machine-learning approaches have been employed to compare the efficacy of the three- and five-factor models (Diallo et al., 2023).

The empirical validity of the five-factor model has also been tested under extreme market conditions, such as during the COVID-19 pandemic. Research by Gao (2023) and Костин et al. (2022) demonstrates an increased explanatory power of the profitability and investment factors during crisis periods, reinforcing the model's relevance and underscoring the need for ongoing empirical evaluation across diverse temporal and economic contexts (Gao, 2023; Костин et al., 2022).

Applying the Fama-French five-factor model is an emerging study area in Islamic finance and Sharia-compliant stocks. Given the unique investment strategies of Islamic indices that emphasize ethical considerations alongside financial performance, this model holds particular relevance (Sohor & Low, 2024). Anuno et al. (2023) highlight the importance of adapting the model to Sharia-compliant portfolios, noting that investment constraints inherent in Sharia principles may affect factor performance differently than conventional portfolios (Anuno et al., 2023).

Moreover, Musawa et al. (2018) compare the five-factor model with the Capital Asset Pricing Model (CAPM) within Islamic finance contexts, concluding that the five-factor model better captures pricing nuances by accounting for the ethical restrictions of Sharia compliance (Musawa et al., 2018).

Munawaroh and Sunarsih (2020), focusing on the Indonesian Sharia Stock Index, demonstrate that the five-factor model significantly explains excess returns in Sharia-compliant portfolios and effectively adapts to Sharia restrictions while delivering competitive performance (Munawaroh & Sunarsih, 2020).

Conversely, Safiullah and Shamsuddin (2019) suggest that despite its strong performance, the model requires adjustment for local market conditions and investor behaviors specific to Sharia-compliant assets. Their findings point to nuanced risk assessments not fully captured by the standard five-factor framework, especially considering that Sharia-compliant stocks may exhibit a lower average cost of capital due to ethical compliance (Safiullah & Shamsuddin, 2019).

Building upon this work, the present study contributes novel insights by applying the Fama-French five-factor model specifically to IDX Sharia Growth Stocks. This segment remains relatively underexplored in the literature. By integrating advanced asset pricing techniques with the distinctive ethical and investment characteristics of Sharia-compliant growth stocks listed on the Indonesian Sharia Stock Index (ISSI), this research fills a critical gap in portfolio optimization strategies that align financial performance with Islamic ethical principles. This approach contributes both theoretically and practically by equipping investors in emerging Islamic financial markets with refined asset-pricing insights.

Overall, the literature reveals a growing consensus that tailoring the Fama-French five-factor model to Sharia-compliant stocks enhances its explanatory power and equips ethically focused investors with more refined analytical tools. Continued research is recommended to further adapt the model by incorporating local market dynamics and ethical investment frameworks, thereby improving performance measurement within Islamic finance.

Hypothesis Development

The Influence of Market factors on excess returns
A robust body of literature supports the assertion that market factors are critical in determining stock returns. Huang et al. construct a three-factor model, demonstrating that including market risk (the excess market return) can help explain excess returns that the Capital Asset Pricing Model (CAPM) does not account for (Y. Huang et al., 2013). Additionally, studies have shown that incorporating multiple risk factors, such as the size and value premiums identified in the Fama-French model, enhances the explanatory power regarding excess returns (Cho, 2012; Diallo et al., 2023). Moreover, market factors have been recognized as vital determinants of stock performance in various contexts and asset classes, confirming their role in explaining excess returns beyond the traditional CAPM framework (Diallo et al., 2023). Consistent evidence from several studies indicates that the market risk premium significantly correlates with excessive returns, affirming that market factors directly affect excess returns in portfolios (Safiullah & Shamsuddin, 2019; Wijaya et al., 2018).
H_1: Market factors significantly influence excess returns

The Influence of The Size premium on excess returns
The Fama-French model's relationship between firm size and excess returns is fundamental. The firm size factor—measured by the return difference between small-capitalization and large-capitalization firms—is explicitly designed to capture the return premium associated with smaller companies. Empirical studies, such as those by Wijaya et al., provide evidence that the size premium, represented by this firm size component, effectively explains average return characteristics across various portfolios (Wijaya et al., 2018). Furthermore, Safiullah and Shamsuddin emphasize that the size factor is crucial in explaining variations in expected excess returns, correlating with the historical outperformance of small-cap equities relative to larger firms (Safiullah & Shamsuddin, 2019). Cho highlights that the Fama-French model's incorporation of the size factor consistently validates its value in predicting returns across financial markets, underscoring the importance of the size factor in modeling excess returns (Cho, 2012). These findings collectively support the conclusion that size significantly influences e xcess returns in stock portfolios.
H_2: The Size premium significantly affects excess returns

The Influence of The Book-to-Market Value Factor on Excess Returns
This hypothesis is supported by various studies that demonstrate the correlation between The Book-to-Market Value Factor and stock performance. For instance, Alrabadi and Alrabadi's study investigating the Fama-French five-factor model in the Amman Stock Exchange indicates that the book-to-market value factor exhibits statistically significant effects on daily excess returns over several years, highlighting its relevance within this context (Alrabadi & Alrabadi, 2018). This finding underscores the importance of value investing, where firms with higher book-to-market ratios are often associated with higher subsequent returns, confirming the traditional belief in a value premium. Furthermore, Vo's research on the Australian market shows that incorporating the book-to-market value factor offers a more comprehensive explanation of average returns compared to simpler models. However, it also suggests that the factor may not always be statistically significent when combined with other variables in the extended five-factor model (Vo, 2015), raising questions about the consistency of its explanatory power across different markets..

Gharaibeh and Al-Qudah support the relevance of this factor by affirming its statistical significance in determining returns, particularly when considered alongside other variables such as firm size (measured by the return difference between small and large firms) (Gharaibeh & Al-Qudah, 2020). In contrast, Kubota and Takehara's study of the Japanese market reveals variability, suggesting that the book-to-market value factor may not consistently show strong statistical significance in all regions.(Kubota & Takehara, 2017). Nonetheless, research by Musawa et al. demonstrates that including the book-to-market value factor alongside other components consistently improves the modeling of excess returns, supporting its inclusion in the Fama-French five-factor framework. (Musawa et al., 2018). This model affirms the continuing importance of the book-to-market value factor in global asset pricing.
H_3: The book-to-market value factor significantly affects excess returns

The Influence of Profitability on excess returns
Research has consistently highlighted the impact of the profitability factor in explaining excess returns. Alrabadi & Alrabadi's examination of the Amman Stock Exchange revealed that the profitability factor is statistically significant in affecting daily returns (Alrabadi & Alrabadi, 2018). Furthermore, Qin argues that profitability factors can yield excess returns and are crucial for better describing portfolio performance (Qin, 2019). The appreciation of profitability as a key driver of excess returns aligns with the expanded understanding of the five-factor model, confirming its importance in financial analysis. Support for this hypothesis is also found in other studies. For instance, Akbar et al. provide empirical evidence that the profitability factor—measured by the return difference between firms with robust and weak earnings—positively correlates with excess inventory returns, illustrating its relevance in broader investment contexts (Akbar et al., 2021). Thus, these findings underscore that higher profitability is typically associated with higher excess returns.
H_4: Profitability has a significant positive effect on excess returns

The Influence of Investment on Excess Returns
The investment factor—measured by the return difference between firms with conservative and aggressive asset growth strategies—also plays a pivotal role in determining excess returns. Research by Cai et al. outlines that the investment factor enhances the understanding of excess returns, making it an essential component of the Fama-French five-factor model (Cai et al., 2021). This finding resonates with current empirical evaluations, which frequently affirm the significant positive role of investment styles—specifically, the return differences between firms with conservative and aggressive asset growth strategies—in affecting stock performance. Moreover, various studies indicate that the influence of the investment factor is noteworthy. For instance, Gharaibeh and Al-Qudah illustrate that the investment factor correlates positively with cumulative returns, underscoring its significance in asset pricing models (Gharaibeh & Al-Qudah, 2020). In a broader context, research by Buditomo et al. reflects similar observations, affirming that both the investment factor—measured by the return difference between firms with conservative and aggressive asset growth strategies—and the profitability factor—measured by the return difference between firms with robust and weak earnings—contribute positively

to excess returns (Buditomo et al., 2024). Thus, this supports the hypothesis that higher levels of conservative investments yield greater excess returns than aggressive investments.

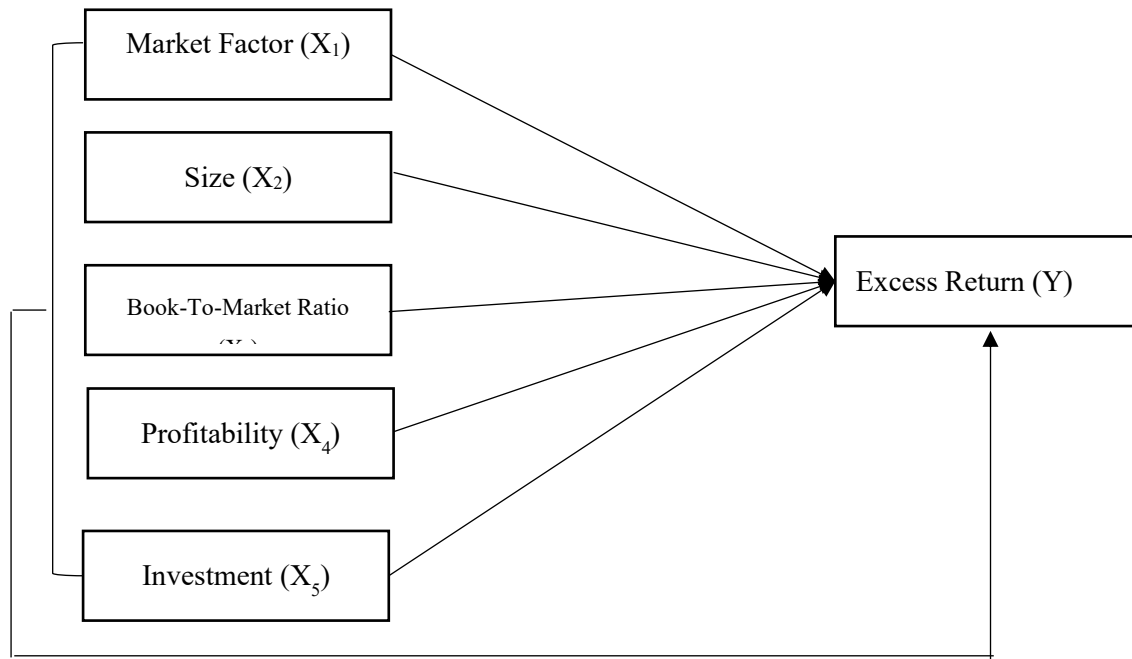H$_5$: Investment significantly affects excess returns

Figure 1. Conceptual Framework

Method

This study aims to explain the excess return of stock portfolios using the Fama-French five-factor model. The independent variables employed in this model include the overall market return factor, the firm size factor (measured by the return difference between small and large firms), the book-to-market value factor (measured by the return difference between firms with high and low book-to-market ratios), the profitability factor (measured by the return difference between firms with robust and weak earnings), and the investment factor (measured by the return difference between firms with conservative and aggressive asset growth strategies). The dependent variable is the excess return of stock portfolios listed in the Indonesia Stock Exchange Sharia Growth Index. The data used in this study is secondary and includes information such as closing stock prices, market capitalization, number of outstanding shares, composite stock price index, book value of equity, risk-free interest rate, net income after tax, and total assets, covering the quarterly period from 2022 to 2023.

The portfolio analyzed in this research comprises stocks listed on the Indonesia Stock Exchange and included in the IDX Sharia Growth Stocks index during the study period. The IDX Sharia Growth Index was first launched on October 31, 2022, with the initial evaluation of constituent stocks conducted in December 2022. Therefore, the selected sample includes stocks consistently appearing across the three effective constituent periods: December 2022–May 2023, June–November 2023, and December 1, 2023–May 31, 2024.

From the total population of 30 companies included in the index, a purposive sampling technique was used to select 14 companies based on two main criteria: (1) consistent listing throughout the effective constituent periods and (2) availability of complete quarterly financial data during the observation period. This sampling approach accounts for the limited historical data due to the index's recent launch and ensures data consistency across firms. The selected companies include AKRA, BMTR, BRMS, ENRG, HEAL, ISAT, KLBF, LPPF, MAPI, MYOR, PWON, SIDO, SMRA, and TLKM.

This study uses quarterly data, which reflects the limited timeframe since the index's inception and the relatively low frequency of financial reporting in Indonesia. Quarterly data balances the number of observations and the stability of economic indicators. Although monthly data is shared in financial research, its application here is constrained by the availability of information for newly listed index constituents.

The estimation method employed is Ordinary Least Squares (OLS) using a time-series multiple linear regression approach. Statistical analysis was conducted using E-Views version 13. OLS is a regression technique that minimizes the sum of squared errors to produce efficient coefficient estimates.

The regression model used in this study follows the five-factor framework proposed by Fama and French and is expressed as follows:

$R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + r_p RMW_t + c_p CMA_t + e_{pt}$

While:

$R_{pt} - R_{ft}$ = *excess return* portofolio pada periode t

$R_{mt} - R_{ft}$ = *market factor* pada periode t

$s_p SMB_t$ = *size factor* pada periode t

$h_p HML_t$ = *value factor* pada periode t

$r_p RMW_t$ = *profitability factor* pada periode t

$c_p CMA_t$ = *investment factor* pada periode t

e_{pt} = *error term*

The risk-free rate (R_{ft}) is proxied by the BI 7-Day Reverse Repo Rate (BI7DRR), the benchmark for the risk-free return in the Indonesian context.

Result and Discussion

This study examines the effect of the five factors Fama and French (2015) used in the Fama-French Five-Factor Model for Portfolio Optimization on the excess return of *IDX Sharia* Growth Stocks. In processing the data in this study, the first step in this stage, the 14 companies that are candidates for the *IDX Sharia* Growth Stocks portfolio are formed based on four factors, namely company size (*size*), *book-to-market* ratio, profitability level as seen from the ROE value, and the company's investment level. Then, the study calculated the firm size factor (the return difference between small and large firms), the book-to-market value factor (the return difference between firms with high and low book-to-market ratios), the profitability factor (the return difference between firms with robust and weak earnings), and the investment factor (the return difference between firms with conservative and aggressive asset growth strategies). The following are the calculation results:

Table 1 Fama-French Five-Factor Results

Period	Excess Return	Market Factor	*Size*	*Book-To-Market* Ratio	Profitability	Investment
22Q1	13,60%	1,48%	42,54%	34,99%	26,41%	-12,93%
22Q2	5,75%	-11,23%	-67,49%	20,13%	-38,74%	-48,85%
22Q3	-1,37%	1,72%	-50,47%	67,97%	19,83%	8,07%
22Q4	-3,31%	3,46%	-36,84%	-41,34%	25,96%	8,22%
23Q1	-6,62%	0,93%	-54,49%	-73,42%	33,95%	54,69%
23Q2	-1,78%	6,08%	-23,16%	53,83%	12,86%	-43,87%
23Q3	-8,59%	-6,26%	-67,29%	72,28%	-44,04%	43,82%
23Q4	-9,31%	8,57%	-26,02%	35,51%	-14,62%	14,42%

Source: Processed Data Output E-Views 13

Referring to the table of the results of this calculation, it is known that in the composition of the portfolio size factor in Q1 2022, Portfolios with small company sizes (HEAL, ENRG, SMRA, LPPF, BMTR, PWON, SIDO) have better returns than large company sizes in Q2 to Q4. Meanwhile, in Q2 to Q4, portfolios with large company sizes have better returns than in Q1. Then, in 2023, the composition of the size factor portfolio in all quarters shows that the portfolio with large company sizes (MAPI, BMRS, AKRA, ISAT, MYOR, KLBF, TLKM) has better returns.

Furthermore, the composition of the HML portfolio factor is divided into three categories, namely *high* (H), *medium* (M), and *low* (L). In 2022-2023, a high category (HEAL, BMTR, SMRA, ENRG) was formed, while a medium category (PWON, ISAT, BRMS, AKRA, MAPI, TLKM) and a low category (MYOR, KLBF, SIDO, LPPF). Q1 to Q3 shows higher returns obtained by value stock companies with high categories, while in Q4, higher returns were obtained by growth stock companies with low categories. In 2023, in Q1, higher returns were obtained by growth stock companies in the low category, while in Q2 to Q4, higher returns were obtained by value stock companies in the high category.

Next, the RMW factor portfolio composition is divided into three categories: *robust* (R), *medium* (M), and *weak* (W). Companies that fall into these categories in 2022 are *robust* (LPPF, SIDO, MAPI, AKRA), *medium* (TLKM, ISAT, KLBF, ENRG, PWON, BMTR) and *weak* (HEAL, SMRA, MYOR, BRMS). In Q2 2022, it is found that the portfolio of weak stocks has better returns than stocks in the robust category, while for Q1, Q3, and Q4, it is found that stocks with robust portfolios have better returns than stocks in the weak category. In 2023, there are different issuers for each portfolio category: *robust* (LPPF, AKRA, TLKM, MAPI), *medium* (SIDO, ISAT, ENRG, HEAL, PWON, KLBF) and *weak* (SMRA, MYOR, BMTR, BRMS). In 2023, stocks with high profits or robust categories will have better returns in Q1 and Q2, while stocks with low profits or weak categories have better returns in Q3 and Q4.

Finally, stocks with investment portfolio composition are measured based on total asset growth. Companies are divided into three categories: *conservative* (C), *medium* (M), and *aggressive* (A). In 2022, issuers that fall into each category are *conservative* (MAPI, ISAT, SIDO, LPPF), *medium* (KLBF, SMRA, ENRG, AKRA, TLKM, PWON) and *aggressive* (BRMS, HEAL, MYOR, BMTR)—during Q1-Q2 stocks with low asset growth or aggressive category had better returns than conservative category or high growth stocks. Then, in Q3- Q4, stocks with high growth or conservative categories have a better return than the aggressive category. Furthermore, in 2023, the issuers included in each category are *conservative* (MAPI, ENRG, LPPF, SMRA), *medium* (AKRA, TLKM, SIDO, HEAL, ISAT, PWON) and *aggressive* (MYOR, KLBF, BRMS, BMTR). The calculation results show that stocks with high growth or conservative categories in Q1, Q3, and Q4 have better returns than aggressive categories.

Before proceeding to classical assumption testing, descriptive statistics were compiled to summarize the main features of the dataset. It includes each variable's mean, standard deviation, minimum, and maximum values used in the regression analysis. These statistics provide an overview of the central tendency and variability of the data, which are essential for understanding the general behavior of the variables involved.

Table 2. Descriptive Statistics of Research Variables (2022–2023)

Variable	Mean	Std. Dev.	Minimum	Maximum	Observations
Excess Return	-1.83%	7.10%	-9.31%	13.60%	8
Market Factor	0.84%	6.11%	-11.23%	8.57%	8
Firm Size	-35.53%	39.03%	-67.49%	42.54%	8
Book-to-Market Value	21.12%	38.52%	-73.42%	72.28%	8
Profitability	2.95%	28.79%	-44.04%	33.95%	8
Investment	3.06%	35.93%	-48.85%	54.69%	8

Source: Processed data from E-Views 13

These results show that the firm size factor (measured by the return difference between small and large firms) and the book-to-market value factor (measured by the return difference between firms with high and low book-to-market ratios) have relatively high standard deviations, indicating high variability during the observation period. The excess return variable also has a negative average, which reflects the overall declining return trend in stocks listed in the Indonesia Stock Exchange Sharia Growth Index during the research timeframe.

Following the descriptive analysis, classical assumption testing was performed to ensure the reliability and validity of the regression model.

Next, the variables in Table 1 are tested to see their effect on the excess return of *IDX Sharia* Growth Stocks. Classical assumption testing is needed to know the reliability of the data.
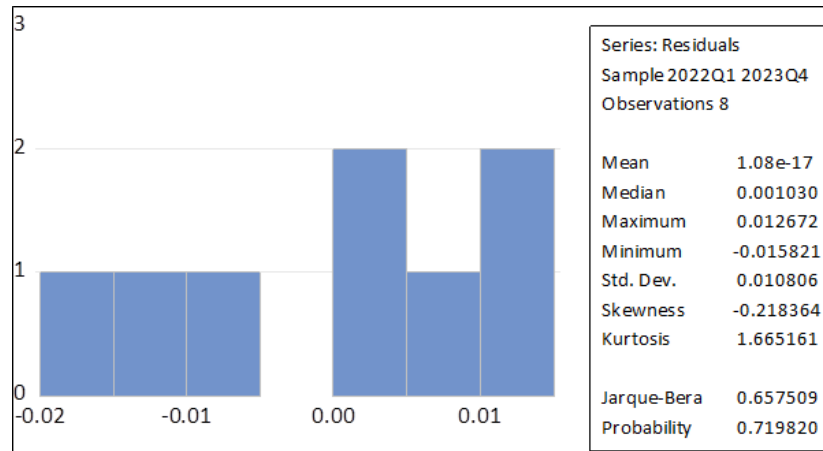

Figure 2. Data Normality Test Results
Source: Processed Data Output E-Views 13

Based on the results of the normality test conducted (Figure 1), it can be seen that the *Jarque-Bera* probability value> significance value is 0.657509> 0.05. This value indicates that the data in the study is normally distributed and can proceed to further testing.

Table 3 Multicollinearity Test Data

	X1_Market_Factor	X2_Firm Size	X3_Book-to-Market Value	X4_Profitability	X5_Investment	Y_Excess_Return
X1_Market_Factor	1,000	0,484	-0,081	0,606	0,114	-0,264
X2_Firm Size	0,484	1,000	0,092	0,484	-0,260	0,615
X3_Book-to-Market Value	-0,081	0,092	1,000	-0,490	-0,326	0,091
X4_Profitability	0,606	0,484	-0,490	1,000	0,126	0,212
X5_Investment	0,114	-0,260	-0,326	0,126	1,000	-0,617
Y_Excess_Return	-0,264	0,615	0,091	0,212	-0,617	1,000

Source: Processed Data Output E-Views 13

Based on Table 2, it can be seen that all variables have a VIF value <10. The VIF value for the *market factor* variable is -0.264, SMB is 0.615, HML is 0.091, RMW is 0.212, and CMA is -0.617.

Table 4 Heteroscedasticity Test Data

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	Prob. F(5,2)	0,205
Obs*R-squared	Prob. Chi-Square(5)	0,199
Scaled explained SS	Prob. Chi-Square(5)	1,000

Source: Processed Data Output E-Views 13

Based on Table 3, it can be seen that the Prob. Chi-Square> 0.199, it is concluded that there is no indication of heteroscedasticity problems in this study.

The calculation results in Table 4 are estimated in the regression equation that the Fama-French Five-Factor Model has formed:

Excess Return = 0,043 - 0,986MarketFactor + 0,14firmsize$_t$ + 0,009 Book-to-Market Value $_t$ + 0,114 Profitability $_t$ -0,079 Investment A$_t$ + e$_{pt}$

Table 5 Multiple Linear Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0,043	0,015	2918457726071710,000	0,100
X1_Market_Factor	-0,986	0,163	-6053286288374200,000	0,026
X2_Firm Size	0,148	0,029	5113812198874380,000	0,036
X3_Book-to-Market Value	0,009	0,020	0,469	0,685
X4_Profitability	0,114	0,042	2749125833556550,000	0,111
X5_Investment	-0,079	0,023	-3406413750221450,000	0,076

Source: Processed Data Output E-Views 13

Referring to the regression equation, it can be interpreted that the constant value is 0.043, indicating the excess return value if all independent variables are continuous. Furthermore, the market factor regression coefficient is -0.986, marking a 1% change in the market factor that can cause a decrease in excess return of 0.986. The results of hypothesis testing H_1 are accepted (probability 0.026 <0.05), which means that the market factor has a significant effect on excess return. This study found that the impact caused by the market factor on excess return is negative.

This study found that the effect of the market factor on excess returns is adverse. This finding presents an intriguing contradiction to the prevailing consensus in financial literature, which generally posits that market returns positively influence excess returns. Classical economic theories and numerous empirical studies, such as those by Fama and French (1992), emphasize a positive risk-return relationship, whereby favorable market performance is typically associated with positive excess returns. Additional research, including studies by Chamadia et al. (2022) and Demirer et al. (2019), further corroborates this positive linkage by highlighting the predictive power of higher-order moments and market volatility on excess returns (Chamadia et al., 2022; Demirer et al., 2019).

However, the present finding aligns with a growing body of literature suggesting that the risk-return relationship is not always linear or positive. For instance, Hu (2022) and Yu and Yuan (2011) demonstrate that investor sentiment can significantly alter the mean-variance relationship, with high-sentiment periods sometimes producing a negative correlation (Hu, 2022; Yu & Yuan, 2011). It is supported by (Antonakakis et al., 2013), who document a consistent negative correlation between policy uncertainty and stock market returns, and Huang and Hueng (2008), who find that the risk-return dynamics may shift to negative during declining market conditions (P. Huang & Hueng, 2008). Moreover, external shocks and unforeseen events, such as the COVID-19 pandemic, have been shown to exert predominantly negative impacts on market performance (Takyi & Bentum-Ennin, 2021). The role of volatility and market fluctuations, detailed by Fonseca and Xu (2018), further influences investor expectations regarding excess returns, adding complexity to this relationship (Fonseca & Xu, 2018).

Therefore, the adverse effect of the market factor on excess returns observed in this study likely reflects specific market contexts and sentiment environments where traditional risk-return theories fall short. It underscores the necessity of a multifaceted analytical framework that incorporates both classical financial models and behavioral finance elements, investor sentiment, and external shocks, which profoundly shape return expectations and can lead to deviations from the conventional risk-return paradigm.

Changes in the composite stock price index will affect the excess return of *IDX Sharia* Growth Stocks. Market factors that reflect overall market movements significantly influence the excess return of IDX Sharia Growth Stocks. It suggests that general market movements can explain most of the variation in the returns of Islamic growth stocks. Investors in IDX Sharia Growth Stocks must consider overall market conditions when making investment decisions.

Next, the results of this multiple regression state that H_2 is accepted that the size factor also significantly affects the excess return of IDX Sharia Growth Stocks. The effect is positive according to the (size) regression coefficient 0.148. It indicates that the excess return value will increase by 0.148 if there is a 1% change in size. Recent research supports the significant impact of the size factor on excess returns while adding new insights to the Fama and French multifactor models. Alrabadi and Alrabadi (2018) demonstrate that the firm size factor—measured by the return difference between small-capitalization and large-capitalization firms—and other risk factors are essential in emerging markets

such as the Amman Stock Exchange. Similarly, Munawaroh and Sunarsih (2020) highlight the importance of the firm size factor in predicting excess returns within Islamic stock portfolios in Indonesia. Drew and Veeraraghavan (2002) find that smaller firms on the Kuala Lumpur Stock Exchange consistently yield higher returns, a phenomenon attributed to investor perceptions of risk. However, Cho (2012) emphasizes that macroeconomic risks also influence the size effect, challenging traditional interpretations of size factor.

Stocks from companies with larger sizes tend to provide different returns compared to smaller companies. It is consistent with the theory that large companies often have lower risk and are more stable in giving returns. Large companies tend to have lower risk compared to small companies. It could signal that the company has better product diversification, easier access to capital markets, and the ability to weather economic fluctuations. This stability makes large company stocks more attractive to investors looking for lower-risk investments.

In signaling theory, company size can be seen as an essential signal influencing investors' perceptions of a company's risk and return (Handayani et al., 2019). With all their characteristics, large companies send positive signals to the market regarding their stability and quality, which are reflected in their stock return performance (Sunarsih & Sholihati, 2023). Investors often use company size as an indicator in making investment decisions. Large size can be a positive signal indicating that the company has a strong foundation and good prospects. It increases investor confidence and the demand for shares of large companies, which can affect the price of these shares in the market.

Furthermore, the results show that the book-to-market value factor (measured by the return difference between firms with high and low book-to-market ratios), the profitability factor (measured by the return difference between firms with robust and weak earnings), and the investment factor (measured by the return difference between firms with conservative and aggressive asset growth strategies) do not significantly affect the excess return of stocks listed in the Indonesia Stock Exchange Sharia Growth Index, as indicated by their p-values exceeding the 0.05 significance level. Therefore, the third, fourth, and fifth hypotheses are rejected. These findings suggest that the book-to-market value, profitability, and investment factors are not influential in explaining the excess returns of this specific index during the observed period.

The non-significance of the book-to-market value factor may be attributed to the unique characteristics of Islamic growth stocks, where traditional value metrics such as book-to-market ratios are less emphasized, partly due to sectoral restrictions under Sharia compliance. Similarly, the lack of impact from the profitability factor—measured by the return difference between firms with robust and weak earnings—may reflect the possibility that profitability, as measured by return on equity, does not fully capture the market's valuation dynamics for these firms, especially when ethical screening and investor sentiment play a more dominant role. Lastly, the investment factor—measured by the return difference between firms with conservative and aggressive asset growth strategies—may be less relevant in this context, as growth-oriented firms typically reinvest aggressively by nature, thereby reducing the ability of this factor to differentiate performance within the index.

While these variables do not appear significant in this study, it does not rule out their potential influence in other time frames or market segments. Further research may explore these dimensions using different models, longer time horizons, or alternative proxies that better capture the dynamics of Islamic equity markets.

Fama and French identified that stocks with high book-to-market ratios (value stocks) tend to generate higher returns than expected based on their systematic risk alone. This phenomenon is known as the "value premium." A positive the book-to-market indicates that value stocks provide higher excess returns than growth stocks with a low book-to-market ratio. One interpretation of the value premium is that stocks with high book-to-market ratios are considered riskier in some dimension (such as higher bankruptcy risk or other fundamental risks) and, therefore, require a higher risk premium. Investors who are willing to hold these stocks are compensated through higher returns.

In the case of IDX Sharia Growth Stocks, the lack of effect of the book-to-market on excess return can be caused by several factors that are unique to Islamic stocks. Islamic stocks in Indonesia, including those incorporated in IDX Sharia, have characteristics different from those of conventional stocks. First, the selection criteria for Islamic stocks are strict and based on compliance with Sharia principles, which avoids investing in specific sectors such as traditional banking, alcohol, and gambling. It limits the

variation in book-to-market ratios among these stocks, as sectors with high book-to-market ratios may not be well represented in the Islamic index.

Secondly, investors in Islamic stocks often focus more on ethical and sustainability aspects than traditional financial indicators such as book-to-market ratios. This preference may reduce the significance of the book-to-market in explaining excess returns as Islamic investors may place more importance on other criteria, such as dividend stability or long-term growth prospects under Sharia principles.

In addition, the Islamic stock market in Indonesia may still be in a developmental stage and is not as efficient as the conventional market. This lack of market efficiency may mean that stock prices do not fully reflect fundamental information, including the book-to-market ratio. As a result, changes in the book-to-market ratio do not significantly impact Islamic stock returns.

Another factor is sector concentration. Islamic stocks are often concentrated in specific sectors such as energy, consumer goods, and technology, which may have fundamental characteristics different from those of stocks in the financial sector or heavy industry, which often have high book-to-market ratios. These sectors may be more influenced by growth and innovation factors rather than book-to-market value, making HML less relevant.

Research results (Grandes et al., 2010) found that value is not statistically significant in Latin American stock markets. In particular, Fama and French (2015) report that the value factor becomes irrelevant with the addition of investment and profitability factors. This is the case in emerging markets following the location of this study, namely Indonesia and Islamic stocks. Research (Darma & Anggi Lestari, 2022; Dewanto & Sumiati, 2022) found that the book-to-market significantly affects stock excess returns.

Next, H5 is not accepted (0.111 > 0.05), meaning that profitability does not affect the excess return of IDX Sharia Growth Stocks. The regression coefficient obtained is 0.114, which indicates an additional excess return of 0.114 if there is a 1% change in the profitability. Fama and French's five-factor model considers profitability to be one of the essential factors affecting stock returns. By measuring the difference in returns between highly profitable (robust) and less profitable (weak) firms, the model suggests that more profitable firms tend to generate higher excess returns. This return differential, measured by the profitability, considers that companies with high profitability consistently deliver better returns than less profitable ones.

In Islamic stocks on the Indonesia Stock Exchange (IDX), profitability measured using Return on Equity (ROE) often has no effect on excess return (return that exceeds the expected level of return or risk-free return). Market valuation is a crucial factor. If the market has anticipated high levels of Return on Equity, the share price may already reflect these expectations, reducing the potential for significant excess returns. Investor sentiment towards the stability and sustainability of the company's financial performance can also change the relationship between Return on Equity and excess return. Investors tend to focus more on other aspects, such as corporate governance, dividend policy, and long-term growth strategies that align with Sharia principles.

In addition, Islamic stocks often have different growth and volatility characteristics. They may focus more on long-term growth and stability than chasing high short-term returns. It could lead to differences in return expectations and risks reflected in the share price, so high excess returns do not always follow high Return on Equity. Therefore, although Return on Equity is an important indicator of profitability, in the context of Islamic stocks on IDX, the relationship between Return on Equity and excess return is influenced by various other factors that interact with each other and form more complex market dynamics.

This research aligns with research conducted by (Foye, 2018). However, research in South Africa found profitability and investment are important risk factors that explain stock returns in South Africa (Charteris et al., 2018). Research (Dirkx & Peter, 2020) that the relevance of profitability and investment factors in the context of international asset pricing studies cannot be applied to country-specific cases in the German market.

Finally, the investment factor—measured by the return difference between firms with conservative and aggressive asset growth strategies—obtained a regression coefficient of -0.079. This indicates that a 1% change in the investment factor would result in a decrease in excess return by 0.079. The hypothesis testing results also show that the investment factor does not have a significant effect on the

excess return of stocks listed in the Indonesia Stock Exchange Sharia Growth Index. Investment factors reflect the return difference between companies with conservative and aggressive investment strategies. Companies that make conservative investments tend to have lower asset growth rates, while companies with aggressive investments have higher asset growth rates. Companies with high asset growth rates (aggressive investments) may face greater risks and uncertainties associated with their investment projects, leading to lower overall returns than companies with conservative investments.

Companies with conservative investments tend to be more stable and have more predictable cash flows, translating into more stable and possibly higher returns in the long run. Conversely, companies with aggressive investments may face higher risks and greater volatility of returns.

However, in this study, the investment factor—measured by the return difference between firms with conservative and aggressive asset growth strategies—does not significantly affect the excess return of stocks listed in the Indonesia Stock Exchange Sharia Growth Index. These stocks are generally categorized as growth stocks, which typically focus on business expansion and increasing sales. Growth-oriented companies tend to prioritize reinvestment of earnings over dividend distribution and may be more influenced by expectations of future earnings growth than by differences in investment strategies. As a result, the investment factor, which is designed to capture return differences based on conservative versus aggressive capital investment behavior, may be less relevant in the context of high-growth Sharia-compliant companies.

One of the few tests of the five-factor model in emerging markets (Zaremba & Czapkiewicz, 2017) found that it outperformed the three-factor model in explaining returns in Eastern Europe's five most important stock markets. Research (Dewanto & Sumiati, 2022) found that investment significantly positively affects stock returns. The Fama and French five-factor model's profitability and investment factor variables do not provide empirical evidence explaining the level of stock returns on the Indonesia Stock Exchange (Saleh, 2020). The results of this test are in line with studies conducted by (Dirkx & Peter, 2020; Fama & French, 2015; Nguyen et al., 2015), which state that profitability and investment variables do not fully explain the relationship with the stock return portfolio when combined in a five-factor model.

From the research results above, it can be seen that the variable that has the most influence on the *excess return of the* stock portfolio in Indonesia is size factor, with a regression coefficient value of 0.148.

Table 6 F Test Results and Coefficient of Determination

R-squared	0,980197271
Adjusted R-squared	0,930690449
F-statistic	197.992.363.695.302
Prob(F-statistic)	0,048773977

Source: Processed Data Output E-Views 13

Referring to Table 5, it can be seen that the probability value of the F-statistic is less than the 5% significance threshold (0.048773977 < 0.05), indicating that, simultaneously, the overall market return factor, the firm size factor (measured by the return difference between small and large firms), the book-to-market value factor (measured by the return difference between firms with high and low book-to-market ratios), the profitability factor (measured by the return difference between firms with robust and weak earnings), and the investment factor (measured by the return difference between firms with conservative and aggressive asset growth strategies) all influence the excess return of stocks listed in the Indonesia Stock Exchange Sharia Growth Index. Therefore, the sixth hypothesis is accepted. Furthermore, the adjusted R-squared value is 0.930690449, indicating that 93.06% of the variation in excess return can be explained by these five factors, while the remaining 6.94% is attributable to other variables not included in the regression model.

Research conducted by (Abdul Halim, 2023) investigated the asset pricing behavior of a sample of Sharia-compliant companies listed in the U.S. compared to the conventional sample as a whole using the Fama & French Five Factor Model. The results showed that when calculating the appropriate expected rate of return for Sharia-compliant portfolios in the U.S., there is evidence to suggest that the Fama & French Five-Factor model is more suitable than the traditional Capital Asset Pricing Model

(CAPM) because the additional risk premium shows consistent significance across the group of Sharia-compliant companies.

Conclusion

This study is the first to analyze the factors influencing the excess return of IDX Sharia Growth Stocks in Indonesia using the Fama-French five-factor model. The findings reveal that, in partial analysis, only the market factor and company size significantly affect excess returns. Among these, the size factor exhibits the strongest influence, indicating that company size is a key determinant of excess returns within Sharia-compliant growth portfolios. Conversely, the book-to-market, profitability, and investment factors do not show significant partial effects.

However, when assessed simultaneously, the Fama-French five-factor model demonstrates a significant impact on excess returns, with an adjusted R^2 of 93%, indicating substantial explanatory power. This suggests that while not all factors individually affect returns, the model as a whole remains a robust tool for analyzing and predicting the performance of Islamic equity portfolios.

These findings carry important implications for investors and portfolio managers in Islamic finance. Specifically, greater attention should be given to market conditions and company size when constructing Sharia-compliant growth portfolios. Understanding the characteristics of large-cap firms and market trends may enhance return optimization.

Further research is recommended to investigate the lack of significance of the book-to-market, profitability, and investment factors within Islamic stocks. Future studies could employ alternative asset pricing models or incorporate additional variables to capture the unique dynamics of Sharia-compliant investments. Moreover, expanding the scope beyond a single Islamic index to include broader samples across different markets may yield more comprehensive insights.

Limitations and Future Research

While this study offers new insights, it also has several limitations worth considering. First, the dataset covers only eight quarters (Q1 2022 to Q4 2023), which may be too short to reflect longer-term market trends or broader economic cycles. This limitation stems from the fact that the IDX Sharia Growth Index was only recently introduced in late 2022, restricting the availability of historical data.

Second, the analysis is based on a purposive sample of 14 companies from the 30 listed in the IDXSHAGROW index. Although this sampling method ensured reliable and complete financial data, the relatively small sample size could affect how broadly the findings can be applied. Including more firms and extending the timeframe might produce more comprehensive and generalizable results.

Third, this study focuses solely on the IDXSHAGROW index, without comparison to other Islamic indices in Indonesia, such as ISSI, JII, or IDX-MES BUMN17. Expanding the analysis to include multiple indices in future research would help assess whether these findings are consistent across different sectors of the Islamic equity market.

Looking ahead, future studies could benefit from using longer time frames, including monthly or daily data to capture finer market dynamics. Comparative research across Islamic indices, alternative asset pricing models, or the integration of qualitative variables—such as investor sentiment or ESG indicators—may also deepen our understanding of return behavior in Sharia-compliant investments. These directions could help build a more holistic and nuanced view of Islamic financial performance

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